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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/691,569

10/24/2003

Kensaku Motoki

33035M0342

6958

441 7590 08/07/2007
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EXAMINER

PIZARRO CRESPO, MARCOS D

ART UNIT

PAPER NUMBER

2814

MAIL DATE

DELIVERY MODE

08/07/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/691,569	Applicant(s) MOTOKI ET AL.	
	Examiner Marcos D. Pizarro	Art Unit 2814	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 July 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 38 and 39 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 38 and 39 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☒ Claim(s) 38 and 39 are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>7/26/2007</u> . | 6) <input type="checkbox"/> Other: _____ |

Application/Control Number: 10/691,569 (Non-Final Rejection)
Art Unit: 2814

Page 2

Attorney's Docket Number: 033035M0342

Filing Date: 10/24/2003

Claimed Priority Dates: 4/28/2000 (Divisional of 09/560,818)
10/29/1998 (CIP of PCT/JP98/04908)
4/14/1998 (JP 102546/1998)
1/20/1998 (JP 009008/1998)
10/30/1997 (JP 298300/1997)

Applicant(s): Motoki et al.

Examiner: Marcos D. Pizarro-Crespo

DETAILED ACTION

This Office action responds to the request for reconsideration filed on 7/26/2007.

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after the final rejection mailed on 2/26/2007. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 7/26/2007 has been entered.

Acknowledgment

2. The request for reconsideration filed on 7/26/2007, responding to the Office action mailed on 2/26/2007, has been entered. The present Office action is made with all the suggested amendments being fully considered. Accordingly, pending in this Office action are claims 38 and 39.

Election/Restriction

3. Applicant's election without traverse of the species reading on figures 18A and 18B, wherein the epitaxial layer is grown by the HVPE method to form an ingot, in the reply filed on 7/26/2007 is acknowledged.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

6. Claims 38 and 39 are rejected under 35 U.S.C. 103(a) as being unpatentable over IBM in view of Tischler (US5679152).

7. Regarding claims 38 and 39, IBM shows most aspects of the instant invention including a method of making a GaN crystal substrate comprising an ingot forming step

of forming an ingot of GaN crystal by growing an epitaxial layer made of GaN on a GaN crystal employed as a seed layer. The method also comprises a cutting/cleaving step of cutting/cleaving the ingot into a plurality of sheets. See, e.g., IBM: disclosure text/II.5-7,35-40,46-49). IBM also teaches that the sheets are ideally used as conducting substrates in the optoelectronics field (see, e.g., disclosure text/II.1-2).

8. Tischler also teaches that, because of their optoelectronic properties, GaN substrates are highly advantageous in the fabrication of a wide range of devices (see, e.g., col.1/II.13-43). However, to effectively use these advantages of GaN, the substrate must be of single crystal character (see, e.g., col.1/II.29-34).

9. It would have been obvious at the time of the invention to one of ordinary skill in the art to have a single-crystalline structure for the substrate and seed layer of IBM, as suggested by Tischler, to effectively use the advantages of a GaN substrate in the field of optoelectronics.

Response to Arguments

10. Applicant's arguments with respect to the claims have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

11. Papers related to this application may be submitted directly to Art Unit 2814 by facsimile transmission. Papers should be faxed to Art Unit 2814 via the Art Unit 2814 Fax Center. The faxing of such papers must conform to the notice published in the Official Gazette, 1096 OG 30 (15 November 1989). The Art Unit 2814 Fax Center

number is **(571) 273-8300**. The Art Unit 2814 Fax Center is to be used only for papers related to Art Unit 2814 applications.

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Marcos D. Pizarro-Crespo** at **(571) 272-1716** and between the hours of 10:00 AM to 8:30 PM (Eastern Standard Time) Monday through Thursday or by e-mail via Marcos.Pizarro@uspto.gov. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wael Fahmy, can be reached on (571) 272-1705.

13. Any inquiry of a general nature or relating to the status of this application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Art Unit: 2814

14. The following list is the Examiner's field of search for the present Office Action:

Field of Search	Date
U.S. Class / Subclass(es): 438/460,464,478,492-496,503-509	8/4/2007
Other Documentation:	
Electronic Database(s): EAST (USPAT, EPO, JPO)	8/4/2007

/Marcos D. Pizarro/

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MDP/mdp
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